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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,276	09/26/2003	Guęorgui Bonov Chkodrov	003797.00623	4935

28319 7590 06/27/2007

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WASHINGTON, DC 20005-4051

EXAMINER
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CHANNAVAJJALA, SRIRAMA T

ART UNIT	PAPER NUMBER
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2166.

MAIL DATE	DELIVERY MODE
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06/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/670,276

**Applicant(s)**

CHKODROV ET AL.

**Examiner**

Srirama Channavajjala

**Art Unit**

2166

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Response to Amendment**

1. Claims 1-46 are presented for examination.
2. Claims 1,23,45 have been amended [4/23/2007]
3. Claims 1,23,45 have been amended [12/05/2006].
4. Claims 47-49 have been cancelled [12/5/2006].
5. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 December 2006 has been entered, Office action is as follows
6. Examiner acknowledges applicant's amendment filed on 7/21/2006.

### ***Drawings***

7. The Drawings filed on 7/21/2006 are approved and acceptable for examination purpose
8. The Drawings filed on 9/26/2003 are acceptable for examination purpose.

***Information Disclosure Statement***

9. The information disclosure statement filed on **9/26/2003** is in compliance with the provisions of 37 CFR 1.97, and has been considered and a copy is enclosed with this Office Action.

***Specification***

10. Applicant has incorporated by reference co-pending application 10/157,968, at page 9-10 in the specification. Examiner notes that incorporation by reference of an application in a printed United States patent constitutes a special circumstance under 35 U.S.C. § 122 warranting that access of the original disclosure of the application be granted. The incorporation by reference will be interpreted as a waiver of confidentiality of only the original disclosure as filed, and not the entire application file, *In re Gallo*, 231 USPQ 496 (Comm'r Pat. 1986). If Applicant objects to access to the entire application file, two copies of the information incorporated by reference must be submitted along with the objection. Failure to provide the material within the period provided will result in the entire application (including prosecution) being made available to petitioner. The Office will not attempt to separate the noted materials from the remainder of the application. Compare *In re Marsh Engineering Co.*, 1913 C.D. 183 (Comm'r Pat. 1913).

11. Applicant has incorporated by reference co-pending application 10/157,968, at page 9-10 in the specification. Applicant is hereby required to update the status of this application sl. No# in response to this office action.

***Claim Rejections - 35 USC § 112***

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

***13. Claims 1-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.***

14. The metes and bound of the method, system steps of claim 1,23,45 are unclear. In claim 1,23,45, "multiple instances of an activity" with respect to both "active and inactive" conditions are not defined. The steps of the method, computer-readable medium, and data processing apparatus do not actually integrate the first database table, second database table, but merely creating a record" without defining "data types". The steps of "creating a record...", "assigning, for records of the multiple instances...", "deleting from the first table records...", creating, for records deleted..." are indefinite as they lack concrete active limitations as to how the steps are to be accomplished. One of skill in the art would not be able to determine what exactly must be done to accomplish the goal of the preamble. It is unclear how the "creating a record in the first database table...", "data types". The steps of "creating a record...", "assigning, for records of the multiple instances...", "deleting from the first table records...", creating, for records deleted..." is accomplished. Furthermore, what "plurality of data types" meant with respect to active instance record[s] and inactive instance record[s]?, how records of the multiple instances in the inactive condition" is

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assigning?, similarly, it is unclear what is meant by "deleting from the first table records of instances having values..." and what is meant by "reducing the size" of the first database table,[ without defining size of the database table in the first place] in relation with degradation of response times, particularly "response times" itself indefinite because, "response times" is nowhere defined with respect to creating record, assigning for records, deleting records and like.

15. It is unclear where to add the limitations of claim 2, 24 does not appear to be further process step and does not appear to further limit the method of claim 1,23. It is unclear what is meant by "no record of the second table is updated after being created". Claim 1,23 recites more than one "creating a record".

16. It is unclear where to add the limitations of claim 3,25 to the method of claim 1,23. It is unclear which "inactive condition corresponds to an instance of the activity being complete", claim 1,23 recites "multiple instances in the inactive condition".

17. The limitations of claim 4,26, are not directed to whether "first database table" or "second database table" record, it is unclear what is meant by "at the time of deletion is copied". Similar problem exist in claim 5,27.

18. In claim 6,28, it is unclear what is meant by "active condition" in relation with records.

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19. It is unclear where to add the limitations of claim 7,29 to the method of claim 1,23. It is unclear "flag having a first value" with respect to instance active and inactive.

20. In claim 8,30, what is meant by "one or more of the fields comprises a field containing", is it related to first database table or second database table?, also the limitations do not set forth concrete active steps to be performed in execution of the method, claim 1,23. The limitations of claim 8,30 is confusing and do not clearly meet the goal of the preamble.

21. In claim 9,32, what is meant by "creating view" in relation with first and second tables. These first and second tables are from first database or second database?. The limitation of claim 9,32 is confusing and do not clearly meet the goal of the preamble.

22. In claim 10,32, It is unclear where to add the limitations of claim 10,32 to the method of claims 1,23, particularly, "creating a third database table", "ceasing creation of records in the second table", "creating, for each of the records deleted from ..." , one of skill in the art would not be able to determine what exactly must be done to accomplish the goal of the preamble. Is the "third database table" integrated with first and second database table"? or all these database tables are independent from each other?. The limitations of claim 10,32 appears to be no relation with each other

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because, "creating a third database table" without any information or purpose, the second limitation "ceasing creation of records in the second table" nothing to do with the first limitation "creating a third database table", similarly third limitation "creating, for each of the records....." is nothing to do with first two limitations. The limitations of claim 10,32 is confusing and do not clearly meet the goal of the preamble.

Similar problem exist in claims 11-13, 33-35.

23. In claim 14,36, it is unclear where to add the limitations of claim 14,36 to the method of claims 1,23, particularly, "creating subsequent database tables"..... one of skill in the art would not be able to determine what exactly must be done to accomplish the goal of the preamble. The limitations of claim 14,36 appears to be creating additional database tables without specifically identifying first database, second database or third database. It is unclear whether "creating subsequent database tables..." integrated with first, second, and third database table? Or all these database tables are independent from each other?. The limitations of claim 14,36 is confusing and do not clearly meet the goal of the preamble. Similar problem exist in claims 15-19, 36-42.

24. In claim 20,42, It is unclear what is meant by "generating analysis" with respect to first and second tables, furthermore, what is meant by "first Online Analytical Processing Cube" and "second OLAP cube" and "virtual OLAP cube?", the limitations of claim 20,42 are unclear, as the limitations do not set forth concrete active steps to be performed



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particularly, "generating analysis data". The limitations of claim 20, 42 is confusing and do not clearly meet the goal of the preamble. Similar problem exist in claims 21-22, 43-44.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

***25. Claims 1-46 are rejected under 35 U.S.C. 101 because invention is directed to non-statutory subject matter.***

***As set forth in MPEP 2106(II)A:***

*Identify and understand Any Practical Application Asserted for the Invention. The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the **practical application** for the claimed invention, i.e., why the applicant believes the claimed invention is useful.*

*Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material **stored in a computer-readable medium does not make the invention eligible for patenting.** For example, a claim directed to a word processing **file stored on a disk may satisfy the utility** requirement of 35 U.S.C. 101 since the information stored may have some **"real world"** value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 **does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application.***

26. Regarding claim 1, "A method for maintaining information regarding multiple instances of an activity, each instance having an active condition in which

.....modified, the method comprising:

creating a record in a first database.....

assigning, for records of the multiple instances.....

deleting from the first table records of instances having values in the one or more fields indicative of the inactive condition thereby reducing the size of the first database table to prevent degradation of response times when database users access the records for the instances in the active condition; and

creating, for records deleted .....database table" is directed to "abstract idea" because all of the elements in the claim 1 would reasonably be interpreted by one

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of ordinary skill in light of the disclosure at page 11, [26], page 12-16 [32], page 19 [38], page 20-21 as software, such that the method is software, per se, is "non-statutory subject matter" and ***claim 1 do not have*** "practical application" because the "final result" by the claimed invention in the claim 1 elements particularly ***"deleting from the first table records of instances having values in the one or more fields indicative of the inactive condition thereby reducing a size of the first database table to prevent degradation of response times when database users access the records for the instances in the active condition; and creating, for records deleted from the first table, a corresponding record in a second database table"*** is not producing "useful, tangible and concrete" and therefore, claim 1 is a non-statutory subject matter.

The claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State Street sets forth that the claimed invention must produce a ***"useful, concrete result."*** In other words, the claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are, at best, functional descriptive material *per se*.

**The Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility** states in section IV C. 2 b. (2) (on page 21 in the PDF format):

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result.

Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).

If, Claim 1 have the result of producing “real-world” results related to ***“deleting from the first table records of instances having values in the one or more fields indicative of the inactive condition thereby reducing a size of the first database table to prevent degradation of response times when database users access the records for the instances in the active condition; and creating, for records deleted from the first table, a corresponding record in a second database table”*** however the claim[s] do not specify that the result either output, displayed or at least stored to a user, but merely manipulating database table record instances particularly values in the fields, furthermore, without practical usage of the “creating, for records deleted from the first table, a corresponding record in a second database table” and without producing “real-world” useful results to the user

The examiner reviewed the specification at page 11, [26], page 12-16 [32], page 19 [38], page 20-21 but was unable to find a practical real-world use of the result (***“deleting from the first table records of instances having values in the one or more fields indicative of the inactive condition thereby reducing a size of the first database table to prevent degradation of response times when database users access the records for the instances in the active condition; and creating, for records deleted from the first table, a corresponding record in a second database table”***)

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If the applicant is able to find one and inserts it into the claims provide the location the element is found in the specification.

The claims 2-22 dependent from claim 1 is also rejected in the above analysis.

27. Regarding claim 23, 45, "A computer-readable medium having stored thereon data representing sequences of instructions which, when executed by a processor, cause the processor to perform steps comprising:

'creating a record in a first database table for .....

'each instance has an active condition.....is not to be modified;

'the first table records are created for instances .....

'each record of the first table contains a field for each of a plurality of data.....

'assigning, for records of the multiple instances in the ....values to the....

'deleting from the first table records.....inactive condition;

'creating, for records deleted from the first table,,,,,database table"

is directed to "abstract idea" because all of the elements in the claim 23,45 would reasonably be interpreted by one of ordinary skill in light of the disclosure at page 11, [26], page 12-16 [32], page 19 [38], page 20-21 as software, such that the method "software per se" performing "algorithm, formula, or routines or calculation or manipulating "multiple instances of an activity or inactive condition[s], is "non-statutory subject matter" and **claim 23,45, do not have** "practical application" because the "final result" by the claimed invention in the claim 23,45 elements particularly "**deleting from**

***the first table records of instances having values in the one or more fields indicative of the inactive condition thereby reducing a size of the first database table to prevent degradation of response times when database users access the records for the instances in the active condition; and creating, for records deleted from the first table, a corresponding record in a second database table"*** is not producing "useful, tangible and concrete" and therefore, claim 23,45 is a non-statutory subject matter.

The claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State Street sets forth that the claimed invention must produce a ***"useful, concrete result."*** In other words "the claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are, at best, functional descriptive material *per se*.

**The Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility** states in section IV C. 2 b. (2) (on page 21 in the PDF format):

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had "no substantial practical application.").

If, Claim 23,45 have the result of producing "real-world" results related to ***"deleting from the first table records of instances having values in the one or***

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***more fields indicative of the inactive condition thereby reducing a size of the first database table to prevent degradation of response times when database users access the records for the instances in the active condition; and creating, for records deleted from the first table, a corresponding record in a second database table***” however the claim[s] do not specify that the result either output, displayed or at least stored to a user, but merely manipulating database table record instances particularly values in the fields, furthermore, ***without practical usage*** of the “***creating, for records deleted from the first table, a corresponding record in a second database table***” and without producing “real-world” useful results to the user

The examiner reviewed the specification at page 11, [26], page 12-16 [32], page 19 [38], page 20-21 but was unable to find a practical real-world use of the result (“***deleting from the first table records of instances having values in the one or more fields indicative of the inactive condition thereby reducing a size of the first database table to prevent degradation of response times when database users access the records for the instances in the active condition; and creating, for records deleted from the first table, a corresponding record in a second database table***”)

If the applicant is able to find one and inserts it into the claims provide the location the element is found in the specification.

*“Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a*

*claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some "real world" value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application", see **MPEP 2106(II)A.***

Also, examiner notes that merely "creating, for records deleted from the first table, a corresponding record in a second database table" is not a positive recitation of a real world result. Thus the claimed result is not tangible and thus the claimed result is not a "useful, concrete and tangible result." The court in State Street noted that the claimed invention in Alappat constituted a practical application of an abstract idea because it produced *a useful, concrete and tangible result* the display of a smoothed heart beat to a system user. The Federal Circuit further ruled that it is of little relevance whether a claim is directed to a machine or process for the purpose of a § 101 analysis. AT&T, 172 F.3d at 1358, 50 USPQ2d at 1451 (see the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, Annex II).

The examiner reviewed the specification but was unable to find a practical real-world use of the result ( claim 1, claim 23, claim 45, and claim 47, for example claim 1, 23: "creating, for records deleted from the first table.....second database table"). If the applicant is able to find one and inserts it into the claims provide the location the element[s] is found in the specification.



In the above analysis, claims 24-44 dependent from independent claim 23 is also rejected., furthermore, independent claim 45 is also rejected in the above analysis.

**For "General Analysis for Determining Patent-Eligible Subject Matter", see 101 Interim Guidelines as indicated below.**

<<<http://www.uspto.gov/web/offices/pac/dapp/ogsheet.html>>>

see MPEP 8<sup>th</sup> edition, Rev 5, Aug 2006, ***No new matter to be added***

### ***Double Patenting***

28. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

29. Claims 1,23,45,47 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,18,28,34,39, of co pending Application No. **10/670,561**, filed on 9/26/2003, although the conflicting claims are not identical, they are not patentably distinct from each other because in the present application Independent Claims 1,23,45,47,directed to method for maintaining information regarding multiple instances of an activity.....creating a record in a first database table....assigning, for records of the multiple instances....deleting from the first table....creating, for records deleted from the first table..... while co-pending application **10/670,561 is now US Pub.No. 2005/0071320** is directed to "a method for maintaining aggregations of ....fields of multiple database records comprising: creating multiple aggregations... subsets of multiple database records; selecting a first aggregation ....update of a first of the multiple database records...revising, based on one or more values within .....preventing subsequent selection of the first aggregation.....selecting, while the first aggregation group update.....revising, based on one or more values within the inserted or updated second database record.....aggregation group. It would have been obvious one of the ordinary skill in the art at the time of the applicant's invention to add or drop limitation in order to arrive at the same results, for example in the present application dropping the limitation such

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as inserted or updated second database record during the first aggregation or update of a second of the multiple records or vice versa may be used for in multiple instances both active and inactive conditions particularly either creating or updating the respective records in a typical relational database tables, further examiner notes that co-pending application" aggregation records corresponds to instances. Accordingly, the instant Claims are very broad and within the scope of the Claims of the Application No. 10/670,561.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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**Claim Rejections - 35 USC § 103**

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**31. Claims 1-19,23-41, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellow et al. [hereafter Bellow], US Patent No. 6477525 in view of Nakano et al. [hereafter Nakano], US Pub.No. 2003/0217075 filed on Jan 27,2003.**

32. As to claim 1,23,45, Bellow teaches a system which including 'maintaining information regarding multiple instances of an activity, each instance having an active condition in which information about instance is to be modified or an inactive condition in which information about the instance is not to be modified' [col 2, line 6-8, col 4, line 40-44], Bellow is directed to relational database management system, more specifically Bellow suggests "summary tables or materialized views that are created from the base tables, further these base tables are periodically updated as the new data is being added to the tables that corresponds to instances of an activity related to data tables;

'creating a record in a first database table for each of the multiple instances in the

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active condition [col 11, line 64-67], Bellow specifically teaches materialized view corresponds to creating views that contain tables for example as detailed in fig 8, each record containing a field for each of a plurality of data types, one or more of the fields in each active instance record having a value indicative of the active condition' [col 12, line 50-61], Bellow specifically teaches materialized view is defined by the query for example see query 2 at page 12, line 52-59, particularly having ""product\_name, city, month, as records and joining tables with appropriate condition as detailed in col 12, line 50-61;

'assigning, for records of the multiple instances in the inactive condition, values to the one or more fields indicative of the inactive condition' [col 12, line 24-34, col 13, line 17-20], Bellow specifically teaches assigning specific conditions for join the table or join between the common section and the testing the condition for non-matching join;

'deleting from the first table records of instances having values in the one or more fields indicative of the inactive condition' [col 15, line 18-22], Bellow specifically teaches materialized view may be rewritten in order to delete or removing duplicate records using "DISTINCT " operation as detailed in col 15, line 18-22, also note that Bellow suggests "update" materialized view by adding or removing records periodically [col 2, line 6-8], therefore, "delete, update, add" records are integral part of any relational database management structure;

'creating, for records deleted from the first table, a corresponding record in a second database table' [col 16, line 25-30].

It is however, noted that Bellow does not specifically teach 'reducing a size of the first database table to prevent degradation of response times ', although Bellow specifically suggests materialized views that a database must contain in order to efficiently process a queries is reduced, thereby reducing the size of the database , thus eliminating the overhead associated with the database views [col 5, line 6-11]. On the other hand, Nakano et al. disclosed 'reducing a size of the first database table to prevent degradation of response times' [page 1, col 1, 0007, col 2, 0014]; Nakano suggests both insert and delete process in providing, efficiency managing "free space" in database[s], particularly, prevent the deterioration of storage efficiency and eliminate reorganization or delay the reorganization period [page 1, col 2, 0014].

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Nakano et al., into rewriting a query in terms of a summary based on one-to-one and one – to - many losslessness of joins in relational database query of Bello et al. because both Bellow and Nakano are directed to databases, more specifically, Bello is teaches creating materialized views, joining multiple tables based on various conditions for example a set of non-matching joins established to be all joins and like [see Abstract, col 4, line 51-59, fig 8], while Nakano also teaches DBMS, particularly data tables [fig 4, page 2, col 2, 0040] .

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Nakano et al., into rewriting a query in terms of a summary based on one-to-one and one – to - many losslessness of joins in relational database

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query of Bello et al. because that would have allowed users of Bello to use free space management table, particularly, prevent the deterioration of storage efficiency and eliminate reorganization or delay the reorganization period, without using additional areas and without deteriorating processing performance in insert and delete processes as suggested by Nakano et al. [page 1, col 2, 0014], thus improving the quality and reliability of the system.

33. As to claim 2,24, Bellow disclosed 'wherein no record of the second table is updated after being created' [col 4, line 60-64].

34. As to claim 3,25, Bellow disclosed 'wherein the inactive condition corresponds to an instance of the activity being complete' [col 8, line 37-40].

35. As to claim 4,26, Bellow disclosed 'wherein data in a first table record at the time of deletion is copied to the corresponding second table record' [col 8, line 55-60].

36. As to claim 5,27, Bellow disclosed 'wherein substantially all of the data in the first table record at the time of deletion is copied to the corresponding second table record' [col 8, line 55-60, line 66-67].

37. As to claim 6,28, Bellow disclosed 'wherein the first table contains only records for instances in the active condition' [col 9, line 5-7].

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38. As to claim 7,29, Bellow disclosed 'wherein the one or more of the fields comprises a flag having a first value if an instance is active and a second value if an instance is inactive' [col 9, line 13-15].

39. As to claim 8,30, Bellow disclosed 'wherein the one or more of the fields comprises a field containing, for inactive instance records, a time of completion of the instance' [col 9, line 63-66].

40. As to claim 9,31, Bellow disclosed 'creating a view comprising the first and second tables' [col 9, line 54-57].

41. As to claim 10,14,32,36, Bellow disclosed 'creating a third database table' [col 9, line 66-67], Bellow specifically teaches creating materialized view that has base tables A,B, and C;

'ceasing creation of records in the second table' [col 10, line 1-2];

'creating, for each of the records deleted from the first table after creation of the third table, a corresponding record in the third table' [col 10, line 48-55].

42. As to claim 11,33, Bellow disclosed 'wherein said creating a third database table comprises creating the third database table after a preset time period has elapsed' [col 11, line 1-7].



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43. As to claim 12,34, Bellow disclosed 'deleting the second database table'

[col 12, line 6-10].

44. As to claim 13, 35, Bellow disclosed 'renaming the second database table'

[col 12, line 43-46]

45. As to claim 15,37, Bellow disclosed 'deleting a subsequently created table for each newly created table upon the number of tables reaching a predetermined level'

[col 13, line 52-57].

46. As to claim 16, 38, Bellow disclosed 'archiving a copy of a table prior to deletion'

[col 15, line 11-17].

47. As to claim 17,39, Bellow disclosed 'creating a view comprising the non-deleted tables' [col 16, line 51-54].

48. As to claim 18,40, Bellow disclosed 'creating a subsequent database table comprises renaming the previously crated table' [col 12, line 43-46]

49. As to claim 19,41, Bellow disclosed 'generating analysis data based on data in the first and second tables' [col 29, line 62-65].

**Claim Rejections - 35 USC § 103**

50. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**51. Claim 20-22,42-44,46, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellow et al. [hereafter Bellow], US Patent No. 6477525 in view of Nakano et al. [hereafter Nakano], US Pub.No. 2003/0217075 filed on Jan 27,2003 as applied to claim 1,23, above, and further in view of Colossi et al. [hereafter Colossi] US Pub.No. 20040139061, filed on Jan 13, 2003**

52. As to claim 20, 42,46, Bellow disclosed 'relational database materialized views and records as detailed in fig 8, furthermore, Bellow also suggests "fact table, Time table" containing records corresponds to first table, second table respectively.

It is however, noted that Bellow , Nakano do not specifically teach "generating a first Online Analytical Processing (OLAP) cube, combining the first and second cubes into a virtual OLAP cube'.

On the other hand, Colossi disclosed generating a first Online Analytical Processing (OLAP) cube' [page 2, col 1, 0017-0018 page 4, 0068], Colossi specifically teaches multidimensional metadata object model that defines schemas used in

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relational database representing multidimensional data, further Colossi specifically suggests "cube model" to describe OLAP structure as detailed in page 4, col 1, 0068; , combining the first and second cubes into a virtual OLAP cube'[page 4, col 1, 0071]. As noted in the fig 11, Colossi suggest one instance of each meta data object in an on-line analytical processing layer, any inactive dimensions area dimensions put in dimension product, dimension market, dimension time area [fig 22-25] can be used to filter data, also users can manipulate or drag columns and rows to the area using their mouse. If the users drag a dimension from the area to the columns or rows area, data becomes more detailed. If the users drag an active dimension to the area, the table shows aggregated totals [see fig 22-25].

It would have been obvious to one of the ordinary skill in the art at the time of Applicant's invention to incorporate the teachings of Colossi et al. into rewriting a query in terms of a summary based on one-to-one and one-to-many joins of Bellow et al., reserving pages of database of Nakano et al. because Bellow, Nakano, Colossi are specifically directed to "relational database query", more specifically Bellow et al. directed to creating materialized views, joining multiple tables based on various conditions for example a set of non-matching joins established to be all joins and like [see Abstract, col 4, line 51-59, fig 8], Nakano also teaches DBMS, particularly data tables [fig 4, page 2, col 2, 0040], while Colossi is directed to multidimensional calculations for a relational OLAP engine, more specifically, defining cube model metadata objects that generates from metadata objects having one or more dimension

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metadata objects, also specifying multidimensional aggregations in a relational OLAP system [page 2, col 1, 0021], both Bellow and Colossi teach summary tables or materialized views [see Bellow: fig 8; Colossi: page 3, col 2, 0065], both specifically teach query optimizing [Bellow: fig 2, col 9, line 46-62; colossi: page 3, col 2, 0064] and both are from same field of endeavor.

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Colossi et al. into rewriting a query in terms of a summary based on one-to-one and one-to-many joins of Bellow et al., reserving pages of database of Nakano et al. because that would have allowed users of Bellow, Nakano et al. to create, access, modify, or delete multidimensional metadata objects, and store in a single database, further, it allows to define and join "star-join" schema that has "Time, Product, and other dimensional tables" to a central "fact table" [Colossi: page 4, col 2, 0075, fig 3], hence star schema, all of the dimension metadata objects are connected in a star shape to a central facts metadata object to create a cube model, thus bring the advantages of "flexible metadata" cube model and streamlines the deployment and management of OLAP solutions, and improves the performance of OLAP tools and applications as suggested by Colossi page 3, col 2, 0063.

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53. As to claim 21,43, Colossi disclosed 'generating a second OLAP cube comprises obtaining records from the second table' [page 5, col 1, 0077];

'assigning a unique incremental identifier value to each record in the second table' [page 4, col 2, 0076];

'storing the incremental identifier value for the last record obtained to generate the second OLAP cube' [page 5, col 1, 0082];

'subsequently obtaining additional records from the second table, the additional records not being processed to form the second OLAP cube' [page 5, col 2, 0083];

'updating the second OLAP cube based on the additional records' [page 5, col 2, 0086].

As noted in the fig 11, Colossi suggest one instance of each meta data object in an on-line analytical processing layer, any inactive dimensions area dimensions put in dimension product, dimension market, dimension time area [fig 22-25] can be used to filter data, also users can manipulate or drag columns and rows to the area using their mouse. If the users drag a dimension from the area to the columns or rows area, data becomes more detailed. If the users drag an active dimension to the area, the table shows aggregated totals [see fig 22-25].

54. As to claim 22,44, Colossi disclosed 'generating a second OLAP cube comprises inputting data from second table records into a star-schema and storing said star-schema after generation of the second OLAP cube' [page 4, col 2, 0073, page 7, col 1, 0102];

'said updating the second OLAP cube comprises modifying the stored star-schema and using data from the additional second table records and regenerating the second OLAP cube based on the modified star-schema' [page 4, col 2, 0075].

As noted in the fig 11, Colossi suggest one instance of each meta data object in an on-line analytical processing layer, any inactive dimensions area dimensions put in dimension product, dimension market, dimension time area [fig 22-25] can be used to filter data, also users can manipulate or drag columns and rows to the area using their mouse. If the users drag a dimension from the area to the columns or rows area, data becomes more detailed. If the users drag an active dimension to the area, the table shows aggregated totals [see fig 22-25].

***Response to Arguments***

55. Applicant's arguments filed on 4/23/2007 with respect to claims 1-46 have been fully considered but they are not persuasive, for examiners' response see the discussion below:

a) At page 12-13, applicant presenting arguments without specifically pointing out or discussing "multiple instances of an activity" with respect to both "active and inactive" conditions", but merely cites specification paragraphs 3-9, 22-39, further, applicant argues that there is no need for the claims to define this phrase with respect to the claim language particularly, with respect to "reducing the size" of the first database table, therefore, claims 1-46 fail to particularly pointing out and distinctly claiming the subject matter and are rejected under 35 USC 112 second paragraph.

b) At page 14, applicant argues that claim 1 produces useful, concrete, and tangible result, namely, reducing the size of the first database table.....

As to the above argument [b], claims 1-46 merely manipulating database table record instances particularly values in the fields, furthermore, without practical usage of the "creating, for records deleted from the first table, a corresponding record in a second database table" and without producing "**real-world**" useful results to the user, in other words, what part of the claim 1 is producing "real-world" result?. and what is the

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**"practical use"** ?, at least applicant fail to provide "final result" by the claimed invention in the claim 1 elements particularly "creating, for records deleted from the first table, a corresponding record in a second database table" where it merely recites without any active, positive steps limiting "creating....", how this use is actually practiced. Hence, in connection with the above claim 1, is rejected under 35 U.S.C. 101 because the claimed recitation without any active, positive steps that produces "real-world" result. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. V. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1996);

c) At page 14-15, page 16, claim 1, applicant argues that "Bello and Nakano do not establish prima facie obviousness of claim 1 because Bello and Nakano, either along or in combination do not disclose "each instance having an active condition.....second database table"

In response to applicant's argument[c] that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).



In this case, Bello is directed to processing queries, more specifically, query includes a cumulative aggregate functions, particularly under specifications, generating results of the cumulative aggregate function in the query [see Abstract], As noted, Bellow is teaches "relational database management system", more specifically not only creating tables, but also creating "summary tables or materialized views " from the base tables where these tables are periodically updated with respect to "new data" either being added or capturing any change in the data particularly instances of the related data tables that corresponds to instances of an activity related to data tables [see col 2, line 6-8, col 4, line 40-44], further, it is noted that Bellow also teaches "joining tables" is based on specific condition such as select product\_name,city,month,sum(dollarsales) as sumsales,

From Sales,Product,Region,Time

Where

Sales.prod\_key = Product.prod\_key

Sales.region\_key = Region.region\_key

.....Group by product\_name,city,month

as detailed in col 12, line 50-61

It is also noted that Bellow suggests multiple specific conditions for join tables or join between the common section and the testing the condition for "non-matching" join that corresponds to indicative of inactive condition applied to one or more database table fields or attributes as detailed in col 12, line 24-34, col 13, line 17-20.

Nakano et al. is directed to reserving pages of database, more specifically inserting, deletion of specific data from the database table [see Abstract], because Nakano specifically teaches "saving database table space" or "free area" in the tables Nakano also suggests control information in relation with specific "table data" particularly blocks 1 through 4 and their usage status thereby effectively managing database table space [page 2, col 2 0046, fig 5].

It is noted that Bellow does not specifically teach 'reducing the size of the first database table to prevent degradation of response times ', although Bellow specifically suggests materialized views that a database must contain in order to efficiently process a queries is reduced, thereby reducing the size of the database , thus eliminating the overhead associated with the database views [col 5, line 6-11]. On the other hand, Nakano et al. disclosed 'reducing the size of the first database table to prevent degradation of response times' [page 1, col 1, 0007, col 2, 0014], Nakano suggests both insert and delete process in providing, efficiency managing "free space" in database[s], particularly, prevent the deterioration of storage efficiency and eliminate reorganization or delay the reorganization period [page 1, col 2, 0014].

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Nakano et al., into rewriting a query in terms of a summary based on one-to-one and one – to - many losslessness of joins in relational database query of Bello et al. because both Bellow and Nakano are

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directed to databases, more specifically, Bello is teaches creating materialized views, joining multiple tables based on various conditions for example a set of non-matching joins established to be all joins and like [see Abstract, col 4, line 51-59, fig 8], while Nakano also teaches DBMS, particularly data tables [fig 4, page 2, col 2, 0040] .

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Nakano et al., into rewriting a query in terms of a summary based on one-to-one and one – to - many losslessness of joins in relational database query of Bello et al. because that would have allowed users of Bello to use free space management table, particularly, prevent the deterioration of storage efficiency and eliminate reorganization or delay the reorganization period, without using additional areas and without deteriorating processing performance in insert and delete processes as suggested by Nakano et al. [page 1, col 2, 0014], thus improving the quality and reliability of the system.

d) At page 15, claim 1, applicant argues that "Bello does not disclose, teach, or suggest that the duplicate common section rows are records of instances having values in the one or more fields indicative of inactive condition'.

As to the argument [d], firstly, Bellow is directed to relational database management, more specifically "summary tables or materialized views that are "created " from the "base tables", further these tables are periodically "updated as the new data

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is being added to the tables that corresponds to instances of an activity related to data tables as detailed in col 2, line 6-8, col 4, line 40-44; secondly, as best understood by the examiner, creating materialized views from the base tables [because without creating base tables, it is not possible to create view[s] of a table] is integral part of Bellow's teaching, also materialized view corresponds to creating views that contain tables for example as shown in fig 8, particularly, fact table, time table, month table, year table have records; also, each table having attributes or fields having specific value[s] that corresponds to value indicative of the active condition [see col 12, line 50-61]. It is further noted that Bellow specifically suggests "join condition" testing matching and non-matching joins i.e., join between specific instances for example sales and region and sales and time as detailed in col 13, line 17-20; Bellow is specifically directed to "relational database management, particularly showing various "Query" examples [see col 2, line 40-43], or SQLs, as best understood by the examiner, "delete, update, add" records are integral part of any "relational database management", for example Bellow suggests "update" operation in materialized view by adding or removing records [col 2, line 6-8]

It is however, noted that Bellow does not specifically teach 'reducing the size of the first database table to prevent degradation of response times ', although Bellow specifically suggests materialized views that a database must contain in order to efficiently process a queries is reduced, thereby reducing the size of the database , thus eliminating the overhead associated with the database views [col 5, line 6-11]. On the

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other hand, Nakano et al. disclosed 'reducing the size of the first database table to prevent degradation of response times' [page 1, col 1, 0007, col 2, 0014], Nakano suggests both insert and delete process in providing, efficiency managing "free space" in database[s], particularly, prevent the deterioration of storage efficiency and eliminate reorganization or delay the reorganization period [page 1, col 2, 0014].

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Nakano et al., into rewriting a query in terms of a summary based on one-to-one and one – to - many losslessness of joins in relational database query of Bello et al. because both Bellow and Nakano are directed to databases, more specifically, Bello is teaches creating materialized views, joining multiple tables based on various conditions for example a set of non-matching joins established to be all joins and like [see Abstract, col 4, line 51-59, fig 8], while Nakano also teaches DBMS, particularly data tables [fig 4, page 2, col 2, 0040] .

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Nakano et al., into rewriting a query in terms of a summary based on one-to-one and one – to - many losslessness of joins in relational database query of Bello et al. because that would have allowed users of Bello to use free space management table, particularly, prevent the deterioration of storage efficiency and eliminate reorganization or delay the reorganization period, without using additional areas and without deteriorating processing performance in insert and delete processes

as suggested by Nakano et al. [page 1, col 2, 0014], thus improving the quality and reliability of the system.

e) At page 15, claim 1, applicant argues, "Bello also does not disclose creating for records deleted from the first table, a corresponding record in a second database table.

As to the above argument [e], Bello teaches not only creating number of tables, but also suggests querying tables for example query 5-6, further creating, inserting, updating, deleting operations are integral part of Bello's teachings because, Bello specifically teaches creating "materialized view" [see Abstract], also materialized view created based on the "relational tables", therefore, without creating database tables, join tables, querying tables would not have been possible.

f) At page 16, claim 1, applicant argues that Nakano does not disclose "reducing the size of the first database table to prevent degradation of response times"

As to the argument [f], As best understood by the examiner, Nakano is directed to database management system, more specifically supporting various commands such as inserting data, deleting data from the database tables [see Abstract, page 1, 0004, line 1-3], further, Nakano also teaches designating, switching data storage locations depends on requirement such that new area for data allocation continuously provided [page 1, 0015] particularly organizing database table space effectively thereby improving storage efficiency and access performance of the database [page 1, 0013].

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g) At page 17, claim 2, applicant argues that Bello does not teach that no record of the second table is updated after being created.

As to the above argument [g], firstly, Bello suggests materialized views having tables, secondly, Bello also suggests generating aggregating values by a one-to-many lossless join, further "join" only possible only between at least two tables for example join of A,B,C or Join A,B and D [col 3, line 60-63], also it is noted that edit, update, insert, delete commands are integral part of Bello because, Bello specifically directed to "relational database" and writing "query".

Examiner applies above arguments to claim 24.

h) At page 17, claim 3, applicant argues that Bello does not teach that the inactive condition corresponds to an instance of the activity being complete.

As to the above argument [h], as best understood by the examiner, firstly, Bello suggests join graphs that represent base tables and edges represents joins between the base tables, secondly, Bello also suggests comparing join graph of materialized view with the join graph the results in "joins that are common" to both materialized view and query, therefore, whatever, "not common" may be treated as "inactive" with respect to that query and corresponds to instance of the activity as detailed in col 8, line 37-40.

Examiner applies above arguments to claim 25.

**Conclusion**

**The prior art made of record**

- |    |               |              |
|----|---------------|--------------|
| a. | US Patent.No. | 6477525      |
| b. | US Pub.No.    | 20040139061  |
| c. | US Pub.No.    | 2003/0217075 |

56. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.




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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is 571-272-4108. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone numbers for the organization where the application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

SC  
Patent Examiner.  
June 18, 2007

  
**SRIRAMA CHANNAVAJJALA**  
**PRIMARY EXAMINER**